



2022 CRASH REPORT

PREPARED FOR:

Erie Regional Planning Commission Metropolitan
Planning Organization

PREPARED BY:

Environmental Design Group





TABLE OF CONTENTS

| | |
|--|----|
| TABLE OF CONTENTS..... | 1 |
| INTRODUCTION..... | 2 |
| SOURCE OF DATA..... | 3 |
| METHODOLOGY | 3 |
| ADDITIONAL TRAFFIC CRASH FACTS | 4 |
| HIGH CRASH LOCATIONS RANKED BY NUMBER OF CRASHES | 7 |
| HIGH CRASH RANKED LOCATIONS BY CRASH RATE | 9 |
| HIGH CRASH LOCATIONS RANKED BY SEVERITY | 10 |
| INTERSECTION SCREENING SUMMARIES..... | 11 |
| APPENDIX..... | 12 |

INTRODUCTION

One of the main objectives of the Erie County Regional Planning Commission Metropolitan Planning Organization (ERPC) is to improve the safety of the existing transportation system. Through the study of traffic crash data, the identification of improvements needed to improve safety and level of service on existing roadways are determined. The primary purpose of this report is to summarize crash data that occurred in the ERPC MPO area (all of Erie County and the Lorain County portion of the City of Vermilion) during the most recent three years (2019, 2020, and 2021). At the time of publication of this report, the crash data for the latter part of 2021 may not be complete. Therefore, this report will modify the 36-month period to include the fourth quarter of 2018 and only the first three quarters of 2021. The total time period will be October 1, 2018 through September 30, 2021, labeled herein Q4 2018 – Q3 2021. All data used to generate this report was supplied from the Ohio Department of Transportation's Transportation Information Mapping System (TIMS) and GIS Crash Analysis Tool (GCAT).



Traffic counts are available at some locations and efforts to attain traffic volumes for every roadway in the county are ongoing. Crash rate tables are updated as additional traffic counts become available. As some traffic volume data is not available at this time, the index list of crash related intersections is ranked upon the frequency of crashes at a particular location and table is preliminary in the sense that these listings have been generated only as a tool as a place to start for any community evaluating crash locations. It is possible that as more detailed analysis of a specific location is done, it will be discovered that the problem is either better or worse than this listing has indicated.



Also contained in this report is an analysis of ERPC regional crash data trends for the study period Q4 2018 – Q3 2021.

SOURCE OF DATA

ERPC maintains a computer file of traffic crashes that is received from the Ohio Department of Transportation's TIMS-GCAT program. The TIMS-GCAT system is populated with traffic crash records that are received from the Ohio Department of Public Safety (ODPS). The crash data contains crash records inclusive of all those located in the ERPC MPO region.

The data used in the creation of this report is as follows:

1. Total number of crashes for the last three years,
2. Total number of fatal crashes for the last three years,
3. Total number of pedestrian and bicycle related crashes for the last three years,
4. Frequency Index Table (Number of crashes at particular intersection location),
5. Crash Rate Index Table (Crash Rate calculated where traffic counts available), and
6. Various other crash maps.

METHODOLOGY

Crashes within 200 feet of each intersection cross point were assumed to be related to the intersection, which would likely be adjusted to include or exclude crashes upon more in-depth study of each location. All intersection locations having more than nine crashes in the three-year study period were considered high crash locations.

1. FREQUENCY:

Intersections are ranked according to the total number of crashes experienced at each location during a full three-year study period. Locations with 9 or more crashes during the three-year period are listed. The ranking shown is based upon data for the study period Q4 2018 – Q3 2021.

2. CRASH RATE:

Assessing intersection safety is commonly in terms of "Crash Rate" and expressed as "crashes per million vehicles entering the intersection". The crash rate provides a basis for identifying "high crash" sites. Typically, optimal levels for crash rates are 1.0 or below.

The crash rate takes into account the traffic volume at the intersection, which is one of the predictors of the quantitative risk of a crash. Crash Rates were calculated where Average Daily Traffic (ADT) counts were available and shown in the corresponding table for the study period Q4 2018 – Q3 2021.

The following equation was used to calculate crash rates:

$$R = \frac{1,000,000 \times C}{365 \times N \times V}$$

Where:

R = Crash rate expressed as accidents per million entering vehicles (MEV).

C = Total number of crashes in the study period.

N = Number of years of data.

V = Traffic volumes entering the intersection daily

ADDITIONAL TRAFFIC CRASH FACTS

Additional traffic crash tables and graphs have been included in the report which summarize crash data across the ERPC region for Q4 2018 – Q3 2021. The tables and graphs represent a summary of the information available from ODOT TIMS-GCAT software. The data provides a region wide analysis of information such as crashes by time of day, month, week, lighting and weather conditions, type of vehicles involved in crashes, speed, alcohol related crashes and type of crash.

BELOW IS A SUMMARY OF Q4 2018 – Q3 2021 CRASH STATISTICS FOR THE ERPC MPO REGION:

Total Crashes, 6,704:

- Fatal Crashes = 27 (31 total fatalities)
- Injury Crashes = 1,453
- Property Damage Only Crashes = 5,224



Yearly:

- Crashes in Q4 2018 = 573 (converts to 2,292 yearly rate for comparison)
- Crashes in 2019 = 2,299
- Crashes in 2020 = 2,049
- Crashes in Q1 – Q3 2021 = 1,783 (converts to 2,377 yearly rate for comparison)

Number of fatalities by year:

Q4 2018 – 0 fatalities

2019 – 13 fatalities

2020 – 10 fatalities

Q1 – Q3 2021 – 8 fatalities

Number of incapacitating injuries by year:

Q4 2018 – 4 injuries

2019 – 45 injuries

2020 – 48 injuries

Q1 – Q3 2021 – 66 injuries

Other statistical information:

- 30.0% of total crashes occurred on Friday and Saturday.
- 20.3% of total crashes were rear-end type crashes.
- 18.5% of total crashes involved people 65 years old and over.
- 31.1% of total crashes involved young driver (15 years old – 25 years old).
- 12.6% of total crashes were noted as speed related on the crash report.

- 4.1% of total crashes were distracted driving related.
Of these crashes, drivers were distracted by:
 - Manually operating an electronic communication device (texting, typing, dialing), 10.4%,
 - Talking on hands-free communication device, 1.4%,
 - Talking on hand-held communication device, 3.0%,
 - Other activity with electronic device, 9.3%,
 - Passenger, 5.2%,
 - Other distraction inside the vehicle, 40.7%,
 - Other distraction outside vehicle, 30.1%.
- 6.5% of total crashes indicated drugs and/or alcohol suspected
Of these crashes –
 - alcohol suspected, 74.4%,
 - drugs suspected, 25.6%.
- 1.8% of total crashes were motorcycle related.
- 0.94% of total crashes were bicycle and pedestrian related.

ERPC MPO REGION - COMPARISON CHART

| Category | Number of Crashes per Report Period | | | Change Since Last Report | |
|-----------------------|-------------------------------------|-------------|-------------------|--------------------------|----------------|
| | 2016 - 2018 | 2017 - 2019 | Q4 2018 – Q3 2021 | Difference in Crashes | Percent Change |
| School Zone | 21 | 27 | 23 | -4 | ↓ -14.8% |
| Speed | 824 | 829 | 847 | 18 | ↑ 2.2% |
| 65yrs and Older | 1348 | 1355 | 1243 | -112 | ↓ -8.3% |
| Alcohol | 348 | 347 | 326 | -21 | ↓ -6.1% |
| Motorcycle | 122 | 118 | 120 | 2 | ↑ 1.7% |
| Fatalities | 26 | 28 | 31 | 3 | ↑ 10.7% |
| Youth (15yrs - 25yrs) | 2398 | 2236 | 2089 | -147 | ↓ -6.6% |
| Drugs | 100 | 91 | 112 | 21 | ↑ 23.1% |
| Bicycle | 25 | 22 | 26 | 4 | ↑ 18.2% |
| Pedestrian | 49 | 41 | 37 | -4 | ↓ -9.8% |
| Distracted | 486 | 407 | 366 | -41 | ↓ -10.1% |
| Serious Injuries | 213 | 154 | 163 | 9 | ↑ 5.8% |
| Work Zone | 247 | 134 | 177 | 43 | ↑ 32.1% |



CONCLUSION

In summary, the creation of this report is to assist in identifying those high crash locations within the ERPC MPO Region pursuant to 23 U.S.C 409. The frequency table was created by three years' worth of intersection-only traffic crash data that was obtained from the Ohio Department of Transportation and Public Safety. The creation of the crash rate table included with this report was done by the analysis of crash data and available traffic count data. Again, it is important to note that this report is preliminary in the sense that these listings have been generated only as a tool as a place to start for any community evaluating crash locations. It is possible that as more detailed analysis of a specific location is done, it will be discovered that the problem is either better or worse than this listing has indicated.

TABLES

The following pages contain ranked lists of high crash locations based on certain variables. Pages 7-8 show the intersections ranked by number of crashes primarily and severity secondarily. Severity is determined by the percentage of crashes that result in injury. Page 9 shows the intersections ranked by crash rate, where the AADT is known. Page 10 shows the crashes ranked by severity, down to 27%, as some sources require a 30% minimum rate of injury to receive funding.



HIGH CRASH LOCATIONS RANKED BY NUMBER OF CRASHES

| Rank | Township | Intersection | Number of Crashes | Severity |
|------|------------------|--|-------------------|----------|
| 1 | PERKINS TOWNSHIP | PERKINS AVE / SR-4 | 78 | 29% |
| 2 | PERKINS TOWNSHIP | STRUB RD / US-250 | 50 | 20% |
| 3 | SANDUSKY | PERKINS AVE / US-250 | 40 | 20% |
| 4 | PERKINS TOWNSHIP | US-250 / FUN DR | 34 | 38% |
| 5 | PERKINS TOWNSHIP | SR-4 / STRUB RD | 33 | 39% |
| 6 | PERKINS TOWNSHIP | RAMP FROM SR 2 TO SR 4 / SR-4 | 33 | 33% |
| 7 | PERKINS TOWNSHIP | PERKINS AVE / COLUMBUS AVE | 33 | 12% |
| 8 | PERKINS TOWNSHIP | STRUB RD / COLUMBUS AVE | 32 | 22% |
| 9 | PERKINS TOWNSHIP | RAMP FROM SR 2 N TO US 250 MILAN RD / US-250 | 32 | 22% |
| 10 | PERKINS TOWNSHIP | HULL RD / US-250 | 30 | 23% |
| 11 | SANDUSKY | PERKINS AVE / CALDWELL ST | 28 | 46% |
| 12 | MILAN TOWNSHIP | MASON RD / KELLEY RD | 28 | 25% |
| 13 | PERKINS TOWNSHIP | PERKINS AVE / CAMPBELL ST | 27 | 11% |
| 14 | MILAN TOWNSHIP | MASON RD / US-250 | 26 | 27% |
| 15 | SANDUSKY | GRANT ST / SR-4 | 24 | 25% |
| 16 | HURON TOWNSHIP | US-6 / RYE BEACH RD | 24 | 21% |
| 17 | PERKINS TOWNSHIP | RAMP FROM SR 2 TO US 250 / US-250 | 23 | 22% |
| 18 | PERKINS TOWNSHIP | US-250 / DEWITT AVE | 22 | 50% |
| 19 | HURON TOWNSHIP | PERKINS AVE / US-6 | 22 | 14% |
| 20 | PERKINS TOWNSHIP | US-250 / CROSSING RD | 21 | 33% |
| 21 | GROTON TOWNSHIP | PORTLAND RD / SR-269 | 20 | 60% |
| 22 | PERKINS TOWNSHIP | BOGART RD / US-250 | 20 | 30% |
| 23 | HURON | RAMP FROM SR 2 N TO US 6 CLEVELAND RD / US-6 | 20 | 25% |
| 24 | SANDUSKY | WAYNE ST / MONROE ST | 20 | 15% |
| 25 | PERKINS TOWNSHIP | SR-4 / BOGART RD | 18 | 39% |
| 26 | SANDUSKY | MONROE ST / SR-4 | 18 | 22% |
| 27 | SANDUSKY | MILAN RD / SYCAMORE LINE | 18 | 17% |
| 28 | PERKINS TOWNSHIP | CAMPBELL ST / STRUB RD | 17 | 29% |
| 29 | PERKINS TOWNSHIP | US-250 / KALAHARI DR | 17 | 29% |
| 30 | PERKINS TOWNSHIP | PERKINS AVE / 50 ST | 16 | 38% |
| 31 | SANDUSKY | CAMPBELL ST / TAYLOR ST | 16 | 31% |
| 32 | MILAN TOWNSHIP | SR-113 / US-250 | 16 | 31% |
| 33 | SANDUSKY | CEDAR POINT DR / RIVER AVE / 5TH ST | 16 | 25% |
| 34 | HURON | SR-13 / US-6 | 16 | 25% |
| 35 | SANDUSKY | DECATUR ST / MONROE ST | 16 | 19% |
| 36 | SANDUSKY | MILAN RD / SCOTT ST | 15 | 40% |
| 37 | SANDUSKY | CEDAR POINT DR / US-6 | 15 | 27% |
| 38 | HURON | WILLIAMS ST / US-6 | 15 | 27% |
| 39 | SANDUSKY | CAMP ST / US-6 | 15 | 13% |
| 40 | SANDUSKY | CEDAR POINT DR / 1ST ST | 14 | 29% |
| 41 | SANDUSKY | COLUMBUS AVE / PARK ST / SR-4 | 14 | 21% |
| 42 | SANDUSKY | PERRY ST / MONROE ST | 13 | 38% |
| 43 | SANDUSKY | SHELBY ST / MONROE ST | 13 | 23% |
| 44 | SANDUSKY | PIERCE ST / SR-4 | 13 | 15% |
| 45 | PERKINS TOWNSHIP | US-250 / BAYWINDS DR | 13 | 15% |
| 46 | VERMILION | VERMILION RD / US-6 | 13 | 8% |



HIGH CRASH LOCATIONS RANKED BY NUMBER OF CRASHES (CONTINUED)

| Rank | Township | Intersection | Number of Crashes | Severity |
|------|---------------------|--|-------------------|----------|
| 47 | SANDUSKY | OSBORNE ST / SR-4 | 12 | 58% |
| 48 | VERMILION TOWNSHIP | RAMP FROM SR 60 TO SR 2 N / SR-60 | 12 | 58% |
| 49 | SANDUSKY | US-6 / SANFORD ST | 12 | 42% |
| 50 | SANDUSKY | COLUMBUS AVE / PARISH ST | 12 | 42% |
| 51 | SANDUSKY | A ST / MONROE ST | 12 | 25% |
| 52 | SANDUSKY | VINE ST / MONROE ST | 12 | 25% |
| 53 | SANDUSKY | TYLER ST / SR-4 | 12 | 25% |
| 54 | SANDUSKY | MONROE ST / CAMP ST | 12 | 17% |
| 55 | MARGARETTA TOWNSHIP | RAMP FROM SR 2 TO SR 101 TIFFIN AVE / SR-101 | 11 | 45% |
| 56 | VERMILION | NANTUCKET PL / US-6 | 11 | 45% |
| 57 | SANDUSKY | HUNTINGTON AVE / ROOSEVELT ST / US-6 | 11 | 36% |
| 58 | BERLIN TOWNSHIP | SR-61 / SR-113 | 11 | 36% |
| 59 | PERKINS TOWNSHIP | PERKINS AVE / 52 ST | 11 | 18% |
| 60 | MILAN TOWNSHIP | SR-13 / US-250 | 11 | 18% |
| 61 | SANDUSKY | HANCOCK ST / MONROE ST | 11 | 9% |
| 62 | SANDUSKY | CAMPBELL ST / COLUMBUS AVE | 11 | 0% |
| 63 | SANDUSKY | PERKINS AVE / MARRISEE DR | 11 | 0% |
| 64 | MILAN | SR-113 / SR-601 | 11 | 0% |
| 65 | HURON | CENTER ST / US-6 | 11 | 0% |
| 66 | SANDUSKY | SR-4 / US-6 | 10 | 60% |
| 67 | SANDUSKY | HANCOCK ST / WASHINGTON ST | 10 | 40% |
| 68 | SANDUSKY | COLUMBUS AVE / LANE ST | 10 | 40% |
| 69 | MARGARETTA TOWNSHIP | BARDSHAR RD / SR-101 | 10 | 30% |
| 70 | MILAN TOWNSHIP | MASON RD / SR-13 | 10 | 30% |
| 71 | CASTALIA | SR-101 / SR-269 | 10 | 20% |
| 72 | MARGARETTA TOWNSHIP | MASON RD / SR-4 | 10 | 20% |
| 73 | SANDUSKY | PUTNAM ST / MONROE ST | 10 | 20% |
| 74 | MARGARETTA TOWNSHIP | SR-269 / US-6 | 10 | 10% |
| 75 | SANDUSKY | REMINGTON AVE / US-6 | 10 | 10% |
| 76 | SANDUSKY | SCOTT ST / US-6 | 10 | 0% |
| 77 | VERMILION | WEST RIVER RD / US-6 | 10 | 0% |
| 78 | SANDUSKY | BUCHANAN ST / CAMP ST | 9 | 44% |
| 79 | SANDUSKY | PERKINS AVE / CAMP ST | 9 | 44% |
| 80 | SANDUSKY | DEPOT ST / SR-4 | 9 | 44% |
| 81 | MILAN TOWNSHIP | HURON AVERY RD / US-250 | 9 | 44% |
| 82 | GROTON TOWNSHIP | STRECKER RD / SR-4 | 9 | 33% |
| 83 | GROTON TOWNSHIP | SR-4 / SR-99 | 9 | 33% |
| 84 | SANDUSKY | SHELBY ST / TYLER ST | 9 | 33% |
| 85 | VERMILION | BERKELY RD / US-6 | 9 | 33% |
| 86 | GROTON TOWNSHIP | PORTLAND RD / SR-4 | 9 | 22% |
| 87 | SANDUSKY | COLUMBUS AVE / BOALT ST | 9 | 22% |
| 88 | SANDUSKY | 1ST ST / MEIGS ST | 9 | 22% |
| 89 | VERMILION TOWNSHIP | SAILORWAY DR / SR-60 | 9 | 22% |
| 90 | SANDUSKY | POLK ST / CAMP ST | 9 | 11% |
| 91 | VERMILION | SR-60 / US-6 | 9 | 11% |
| 92 | VERMILION | EWA YEA ST / US-6 | 9 | 11% |



HIGH CRASH RANKED LOCATIONS BY CRASH RATE

| Rank | Township | Intersection | Crash Rate | AADT | Number of Crashes |
|------|---------------------|--|------------|-------|-------------------|
| 1 | MILAN TOWNSHIP | MASON RD / KELLEY RD | 8.748 | 2923 | 28 |
| 2 | GROTON TOWNSHIP | PORTLAND RD / SR-269 | 2.749 | 6645 | 20 |
| 3 | PERKINS TOWNSHIP | PERKINS AVE / SR-4 | 2.213 | 32192 | 78 |
| 4 | SANDUSKY | GRANT ST / SR-4 | 2.169 | 10104 | 24 |
| 5 | PERKINS TOWNSHIP | SR-4 / STRUB RD | 2.057 | 14654 | 33 |
| 6 | PERKINS TOWNSHIP | RAMP FROM SR 2 TO SR 4 / SR-4 | 1.735 | 17375 | 33 |
| 7 | BERLIN TOWNSHIP | SR-61 / SR-113 | 1.715 | 5857 | 11 |
| 8 | PERKINS TOWNSHIP | STRUB RD / COLUMBUS AVE | 1.648 | 17729 | 32 |
| 9 | PERKINS TOWNSHIP | STRUB RD / US-250 | 1.597 | 28591 | 50 |
| 10 | MILAN TOWNSHIP | MASON RD / US-250 | 1.351 | 17576 | 26 |
| 11 | PERKINS TOWNSHIP | CAMPBELL ST / STRUB RD | 1.348 | 11515 | 17 |
| 12 | MILAN TOWNSHIP | MASON RD / SR-13 | 1.245 | 7334 | 10 |
| 13 | MARGARETTA TOWNSHIP | BARDSHAR RD / SR-101 | 1.233 | 7404 | 10 |
| 14 | SANDUSKY | PIERCE ST / SR-4 | 1.159 | 10246 | 13 |
| 15 | MILAN | SR-113 / SR-601 | 1.123 | 8945 | 11 |
| 16 | GROTON TOWNSHIP | STRECKER RD / SR-4 | 1.112 | 7394 | 9 |
| 17 | PERKINS TOWNSHIP | US-250 / DEWITT AVE | 1.054 | 19061 | 22 |
| 18 | SANDUSKY | OSBORNE ST / SR-4 | 1.032 | 10618 | 12 |
| 19 | MARGARETTA TOWNSHIP | RAMP FROM SR 2 TO SR 101 TIFFIN AVE / SR-101 | 1.016 | 9886 | 11 |
| 20 | MILAN TOWNSHIP | SR-113 / US-250 | 0.994 | 14694 | 16 |
| 21 | HURON | SR-13 / US-6 | 0.989 | 14768 | 16 |
| 22 | CASTALIA | SR-101 / SR-269 | 0.971 | 9404 | 10 |
| 23 | PERKINS TOWNSHIP | SR-4 / BOGART RD | 0.953 | 17243 | 18 |
| 24 | VERMILION TOWNSHIP | RAMP FROM SR 60 TO SR 2 N / SR-60 | 0.909 | 12054 | 12 |
| 25 | SANDUSKY | COLUMBUS AVE / PARISH ST | 0.909 | 12057 | 12 |
| 26 | SANDUSKY | PERKINS AVE / US-250 | 0.894 | 40880 | 40 |
| 27 | PERKINS TOWNSHIP | PERKINS AVE / CAMPBELL ST | 0.873 | 28254 | 27 |
| 28 | SANDUSKY | HUNTINGTON AVE / ROOSEVELT ST / US-6 | 0.863 | 11636 | 11 |
| 29 | PERKINS TOWNSHIP | RAMP FROM SR 2 N TO US 250 MILAN RD / US-250 | 0.850 | 34400 | 32 |
| 30 | VERMILION | SR-60 / US-6 | 0.846 | 9715 | 9 |
| 31 | PERKINS TOWNSHIP | PERKINS AVE / COLUMBUS AVE | 0.839 | 35900 | 33 |
| 32 | PERKINS TOWNSHIP | US-250 / FUN DR | 0.827 | 37549 | 34 |
| 33 | SANDUSKY | DEPOT ST / SR-4 | 0.825 | 9965 | 9 |
| 34 | HURON | RAMP FROM SR 2 N TO US 6 CLEVELAND RD / US-6 | 0.759 | 24057 | 20 |
| 35 | PERKINS TOWNSHIP | HULL RD / US-250 | 0.755 | 36306 | 30 |
| 36 | GROTON TOWNSHIP | PORTLAND RD / SR-4 | 0.733 | 11214 | 9 |
| 37 | SANDUSKY | CAMPBELL ST / COLUMBUS AVE | 0.689 | 14582 | 11 |
| 38 | SANDUSKY | SR-4 / US-6 | 0.669 | 13660 | 10 |
| 39 | MARGARETTA TOWNSHIP | MASON RD / SR-4 | 0.627 | 14562 | 10 |
| 40 | PERKINS TOWNSHIP | BOGART RD / US-250 | 0.601 | 30377 | 20 |
| 41 | PERKINS TOWNSHIP | RAMP FROM SR 2 TO US 250 / US-250 | 0.583 | 36013 | 23 |
| 42 | GROTON TOWNSHIP | SR-4 / SR-99 | 0.551 | 14927 | 9 |
| 43 | MILAN TOWNSHIP | HURON AVERY RD / US-250 | 0.483 | 17018 | 9 |
| 44 | MILAN TOWNSHIP | SR-13 / US-250 | 0.377 | 26621 | 11 |



HIGH CRASH LOCATIONS RANKED BY SEVERITY

| Rank | Township | Intersection | Severity | Number of Crashes |
|------|---------------------|--|----------|-------------------|
| 1 | GROTON TOWNSHIP | PORTLAND RD / SR-269 | 60% | 20 |
| 2 | SANDUSKY | SR-4 / US-6 | 60% | 10 |
| 3 | SANDUSKY | OSBORNE ST / SR-4 | 58% | 12 |
| 4 | VERMILION TOWNSHIP | RAMP FROM SR 60 TO SR 2 N / SR-60 | 58% | 12 |
| 5 | PERKINS TOWNSHIP | US-250 / DEWITT AVE | 50% | 22 |
| 6 | SANDUSKY | PERKINS AVE / CALDWELL ST | 46% | 28 |
| 7 | MARGARETTA TOWNSHIP | RAMP FROM SR 2 TO SR 101 TIFFIN AVE / SR-101 | 45% | 11 |
| 8 | VERMILION | NANTUCKET PL / US-6 | 45% | 11 |
| 9 | SANDUSKY | BUCHANAN ST / CAMP ST | 44% | 9 |
| 10 | SANDUSKY | PERKINS AVE / CAMP ST | 44% | 9 |
| 11 | SANDUSKY | DEPOT ST / SR-4 | 44% | 9 |
| 12 | MILAN TOWNSHIP | HURON AVERY RD / US-250 | 44% | 9 |
| 13 | SANDUSKY | US-6 / SANFORD ST | 42% | 12 |
| 14 | SANDUSKY | COLUMBUS AVE / PARISH ST | 42% | 12 |
| 15 | SANDUSKY | MILAN RD / SCOTT ST | 40% | 15 |
| 16 | SANDUSKY | HANCOCK ST / WASHINGTON ST | 40% | 10 |
| 17 | SANDUSKY | COLUMBUS AVE / LANE ST | 40% | 10 |
| 18 | PERKINS TOWNSHIP | SR-4 / STRUB RD | 39% | 33 |
| 19 | PERKINS TOWNSHIP | SR-4 / BOGART RD | 39% | 18 |
| 20 | SANDUSKY | PERRY ST / MONROE ST | 38% | 13 |
| 21 | PERKINS TOWNSHIP | US-250 / FUN DR | 38% | 34 |
| 22 | PERKINS TOWNSHIP | PERKINS AVE / 50 ST | 38% | 16 |
| 23 | SANDUSKY | HUNTINGTON AVE / ROOSEVELT ST / US-6 | 36% | 11 |
| 24 | BERLIN TOWNSHIP | SR-61 / SR-113 | 36% | 11 |
| 25 | PERKINS TOWNSHIP | RAMP FROM SR 2 TO SR 4 / SR-4 | 33% | 33 |
| 26 | PERKINS TOWNSHIP | US-250 / CROSSING RD | 33% | 21 |
| 27 | GROTON TOWNSHIP | STRECKER RD / SR-4 | 33% | 9 |
| 28 | GROTON TOWNSHIP | SR-4 / SR-99 | 33% | 9 |
| 29 | SANDUSKY | SHELBY ST / TYLER ST | 33% | 9 |
| 30 | VERMILION | BERKELY RD / US-6 | 33% | 9 |
| 31 | SANDUSKY | CAMPBELL ST / TAYLOR ST | 31% | 16 |
| 32 | MILAN TOWNSHIP | SR-113 / US-250 | 31% | 16 |
| 33 | PERKINS TOWNSHIP | BOGART RD / US-250 | 30% | 20 |
| 34 | MARGARETTA TOWNSHIP | BARDSTAR RD / SR-101 | 30% | 10 |
| 35 | MILAN TOWNSHIP | MASON RD / SR-13 | 30% | 10 |
| 36 | PERKINS TOWNSHIP | PERKINS AVE / SR-4 | 29% | 78 |
| 37 | PERKINS TOWNSHIP | CAMPBELL ST / STRUB RD | 29% | 17 |
| 38 | PERKINS TOWNSHIP | US-250 / KALAHARI DR | 29% | 17 |
| 39 | SANDUSKY | CEDAR POINT DR / 1ST ST | 29% | 14 |
| 40 | MILAN TOWNSHIP | MASON RD / US-250 | 27% | 26 |
| 41 | SANDUSKY | CEDAR POINT DR / US-6 | 27% | 15 |
| 42 | HURON | WILLIAMS ST / US-6 | 27% | 15 |



INTERSECTION SCREENING SUMMARIES

A closer look has been given to the top ten high crash locations, ranked by number of crashes, and an Intersection Screening Summary has been generated for each location. The summaries include intersection-specific information such as route specifications, log points, ADT, mapping, crash breakdown information, ODOT Key Safety Metrics, and a brief discussion on potential countermeasures to consider. ODOT Key Safety Metrics can be located on the ODOT Safety Viewer web application. Links to the ODOT Safety Viewer and explanations of certain measures can be reached through hyperlinks in the screening summary documents.

For each screening, the subject intersection was reviewed cursorily to understand various factors and conditions discernable by desktop review which often contribute to crash frequency and severity. These factors include:

- types and proportions of crashes in crash history,
- general level of severity of crashes,
- existing safety countermeasures already installed,
- speed limit and probable speed exhibited,
- posted signage,
- distraction potential of average driver in specified area,
- number of lanes and lane assignments,
- geometric factors such as skew, horizontal alignment, vertical profile, curve radii, etc.,
- existing access management,
- current traffic volume,
- probable origin-destination information for large portions of traffic,
- adjacent intersections and proximity, and
- similarity to peer intersections in other Ohio areas.

The analyses use the information gathered from the above factors to consider potential countermeasures that may fit the location based on potential for reducing crash frequency, geometry, operations, and appropriateness. More study is warranted to determine applicability of these safety improvement countermeasures.

The Intersection Screening Summaries are in the Appendix of this report.



APPENDIX

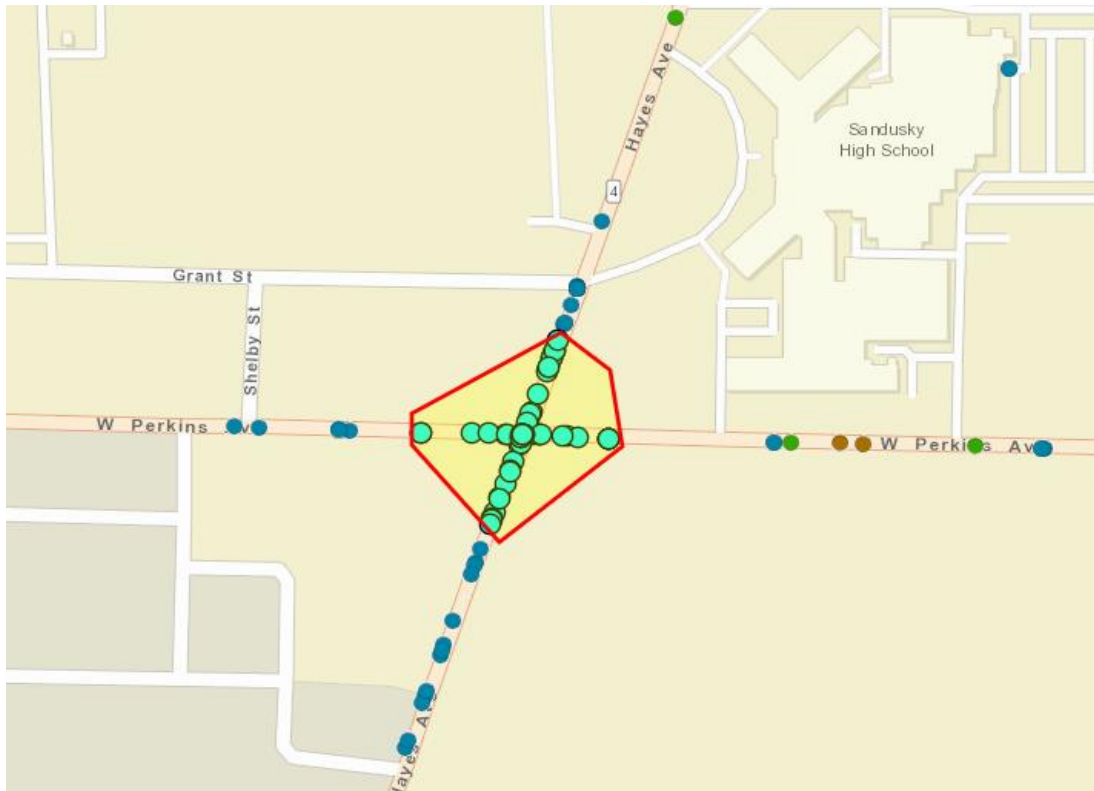
| | | | |
|-------------------------------|--------------------|----------------------------------|---|
| Intersection Location Number: | 1 | Analyst: | RSW |
| Location Name: | PERKINS AVE / SR-4 | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-CR-5 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 1.191 - 1.29 | ADT (1.191 - 1.29) | http://odot.ms2soft.c |
| CRS: | ERI-SR-4 | Google Map Link: | https://www.google.c |
| SA MP: | 10.52 - 10.594 | ADT (10.52 - 10.594) | http://odot.ms2soft.c |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

It appears that more crashes occur on the SR-4 approaches, although the traffic volume on Perkins is 150% of that on SR-4. Some of the crashes on the northbound and southbound approaches may be related to business access drives and not the intersection



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|--------------------|
| Intersection Location Number: | 1 | PERKINS AVE / SR-4 |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|---------|
| Functional Class | 3, 4 | Active Transportation Need | 1, 3, 4 |
| Major Route AADT | 19031 | Active Transportation Demand | 1, 3, 4 |
| Maximum Posted Speed Limit | 55 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.53 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|-------------------------|----|----------------|-----|
| Within SA Segment = 143 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 18 | Fatal | 0 |
| 2017 | 19 | Serious | 2 |
| 2018 | 25 | Visible | 21 |
| 2019 | 27 | Possible | 15 |
| 2020 | 25 | PDO | 105 |
| 20218 | 29 | | |

| Within Logical Termini = | | | |
|--------------------------|--|----------------|--|
| Annual Trend | | Crash Severity | |
| | | Fatal | |
| | | Serious | |
| | | Visible | |
| | | Possible | |
| | | PDO | |
| | | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 1 | 9 | 6 | 43 | 59 |
| Angle | 0 | 1 | 10 | 7 | 36 | 54 |
| Sideswipe - Passing | 0 | 0 | | 0 | 14 | 14 |
| Right Turn | 0 | 0 | | 0 | 4 | 4 |

Potential Countermeasures:

Adjust corridor signal coordination and/or timing, upgrade signals. May need more left turn capacity by dual left turn lanes. Potentially reassign thru/turn lanes.

Signal backplates.

Consider Roundabout.

Could Right-of-Way be impacted by countermeasures?

Yes

Is an alternate intersection geometry proposed?

Yes

Was CAP-X and SPICE analysis conducted?

No

Recommended study format:

Formal

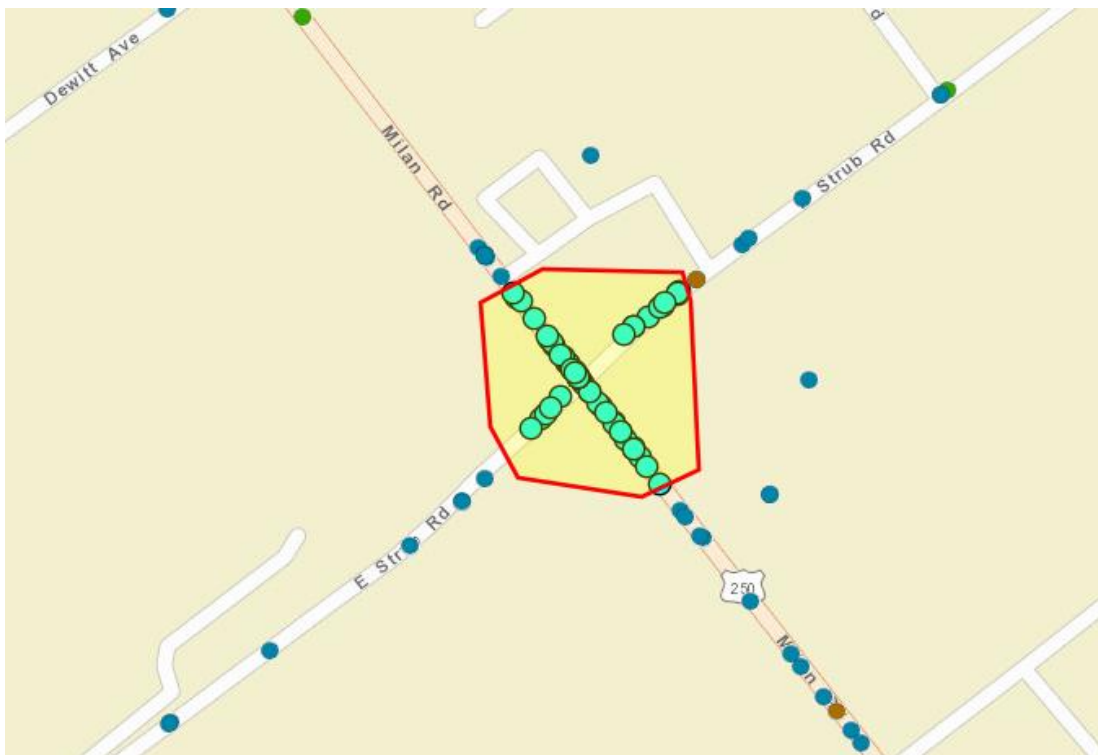
| | | | |
|-------------------------------|-------------------|----------------------------------|---|
| Intersection Location Number: | 2 | Analyst: | RSW |
| Location Name: | STRUB RD / US-250 | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-CR-7 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 3.067 - 3.747 | ADT (3.067 - 3.747) | http://odot.ms2soft.c |
| CRS: | ERI-US-250 | Google Map Link: | https://www.google.c |
| SA MP: | 1.94 - 2.097 | ADT (1.94 - 2.097) | http://odot.ms2soft.c |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes occur in a higher proportion on the US-250 approaches. Crashes on the Strub Road southbound approach may be related to the business drive and not the intersection. Crashes on Strub Road northbound approach may be related to the curvature in the alignment and not the intersection.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|-------------------|
| Intersection Location Number: | 2 | STRUB RD / US-250 |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|-----|
| Functional Class | 4,5 | Active Transportation Need | 3 |
| Major Route AADT | 17180 | Active Transportation Demand | 3 |
| Maximum Posted Speed Limit | 45 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.44 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|-------------------------|----|----------------|-----|
| Within SA Segment = 152 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 31 | Fatal | 0 |
| 2017 | 26 | Serious | 2 |
| 2018 | 30 | Visible | 13 |
| 2019 | 29 | Possible | 13 |
| 2020 | 15 | PDO | 124 |
| 2021 | 21 | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 1 | 5 | 7 | 61 | 74 |
| Angle | 0 | 1 | 5 | 5 | 26 | 37 |
| Sideswipe - Passing | 0 | 0 | 0 | 1 | 11 | 12 |
| Right Turn | 0 | 0 | 0 | 0 | 11 | 11 |

Potential Countermeasures:

Adjust corridor signal coordination and timing, upgrade signals. Analyze the need for capacity on Strub Road. Consider dual left turn lanes on all approaches.

Signal backplates.

Consider Roundabout. Realign Strub Road.

Could Right-of-Way be impacted by countermeasures?

Yes

Is an alternate intersection geometry proposed?

Yes

Was CAP-X and SPICE analysis conducted?

No

Recommended study format:

Formal

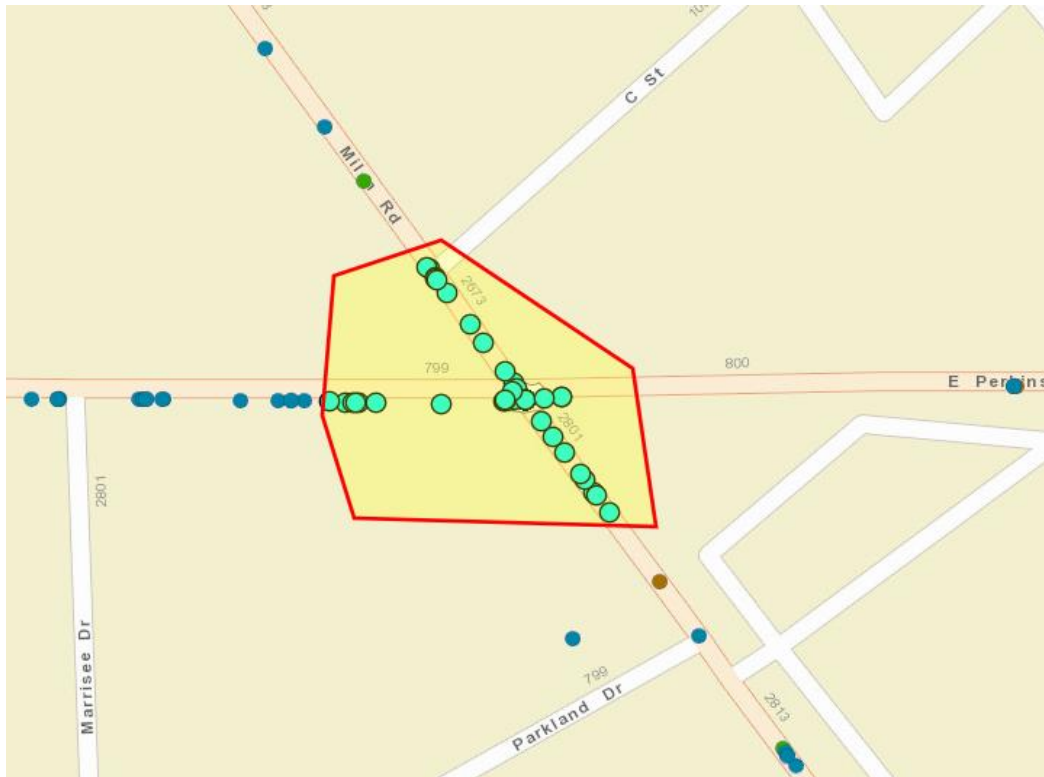
| | | | |
|-------------------------------|----------------------|----------------------------------|---|
| Intersection Location Number: | 3 | Analyst: | RSW |
| Location Name: | PERKINS AVE / US-250 | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-CR-5 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 2.588 - 2.677 | ADT (2.588 - 2.677) | http://odot.ms2soft.com |
| CRS: | ERI-US-250 | Google Map Link: | https://www.google.com/maps/@33.45, -86.8, 15z |
| SA MP: | 1.131 - 1.137 | ADT (1.131 - 1.137) | http://odot.ms2soft.com |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes appear concentrated on the eastbound, northbound, and southbound approaches with relatively few on the westbound approach. Crashes on US-250 may be related to the corridor and secondarily the intersection, or vice versa.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|----------------------|
| Intersection Location Number: | 3 | PERKINS AVE / US-250 |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|------------|--|---------|
| Functional Class | 3, 4 | Active Transportation Need | 1, 3, 4 |
| Major Route AADT | 23700 | Active Transportation Demand | 2, 3 |
| Maximum Posted Speed Limit | 40 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.44, 0.61 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 79 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 17 | Fatal | 0 |
| 2017 | 11 | Serious | 2 |
| 2018 | 10 | Visible | 7 |
| 2019 | 14 | Possible | 7 |
| 2020 | 16 | PDO | 63 |
| 20218 | 11 | | |

| Within Logical Termini = | | | |
|--------------------------|--|----------------|--|
| Annual Trend | | Crash Severity | |
| | | Fatal | |
| | | Serious | |
| | | Visible | |
| | | Possible | |
| | | PDO | |
| | | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 1 | 3 | 3 | 34 | 41 |
| Angle | 0 | 1 | 2 | 3 | 10 | 16 |
| Sideswipe - Passing | 0 | 0 | 1 | 1 | 7 | 9 |
| Right Turn | 0 | 0 | 0 | 0 | 5 | 5 |

Potential Countermeasures:

Review corridor signal coordination/timing, upgrade signals. Analyze need for right-turn only lanes.
 Access management.
 Signal backplates.
 Consider non-traditional shaped Roundabout.

Could Right-of-Way be impacted by countermeasures?

Yes

Is an alternate intersection geometry proposed?

Yes

Was CAP-X and SPICE analysis conducted?

No

Recommended study format:

Formal

| | | | |
|-------------------------------|-----------------|----------------------------------|---|
| Intersection Location Number: | 4 | Analyst: | RSW |
| Location Name: | US-250 / FUN DR | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-US-250 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 3.135 - 3.787 | ADT (3.135 - 3.787) | http://odot.ms2soft.c |
| CRS: | ERI-TR-1298 | Google Map Link: | https://www.google.c |
| SA MP: | 0 - 0.142 | ADT (0 - 0.142) | http://odot.ms2soft.c |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes appear concentrated on the US-250 approaches. Crashes on Fun Drive may be a result of drive ways and sight distance and not related to the intersection.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|-----------------|
| Intersection Location Number: | 4 | US-250 / FUN DR |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|-----|
| Functional Class | 3 | Active Transportation Need | 3 |
| Major Route AADT | 30249 | Active Transportation Demand | 3 |
| Maximum Posted Speed Limit | 45 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.44 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 74 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 13 | Fatal | 0 |
| 2017 | 13 | Serious | 2 |
| 2018 | 9 | Visible | 9 |
| 2019 | 18 | Possible | 17 |
| 2020 | 8 | PDO | 46 |
| 20218 | 13 | | |

| Within Logical Termini = | | | |
|--------------------------|--|----------------|--|
| Annual Trend | | Crash Severity | |
| | | Fatal | |
| | | Serious | |
| | | Visible | |
| | | Possible | |
| | | PDO | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 2 | 7 | 12 | 32 | 53 |
| Sideswipe - Passing | 0 | 0 | 0 | 2 | 5 | 7 |
| Right Turn | 0 | 0 | 1 | 0 | 4 | 5 |
| Left Turn | 0 | 0 | 0 | 0 | 3 | 3 |

Potential Countermeasures:

Adjust corridor signal coordination, upgrade signals. Reassess signal clearance times.
Signal backplates. Consider traffic calming to reduce speeds on US-250. Potentially increase sizes of signage, consider named intersection ahead signs. Improve vehicular wayfinding.

Could Right-of-Way be impacted by countermeasures?

Is an alternate intersection geometry proposed?

Was CAP-X and SPICE analysis conducted?

Recommended study format:

| |
|--------|
| Yes |
| Yes |
| No |
| Formal |

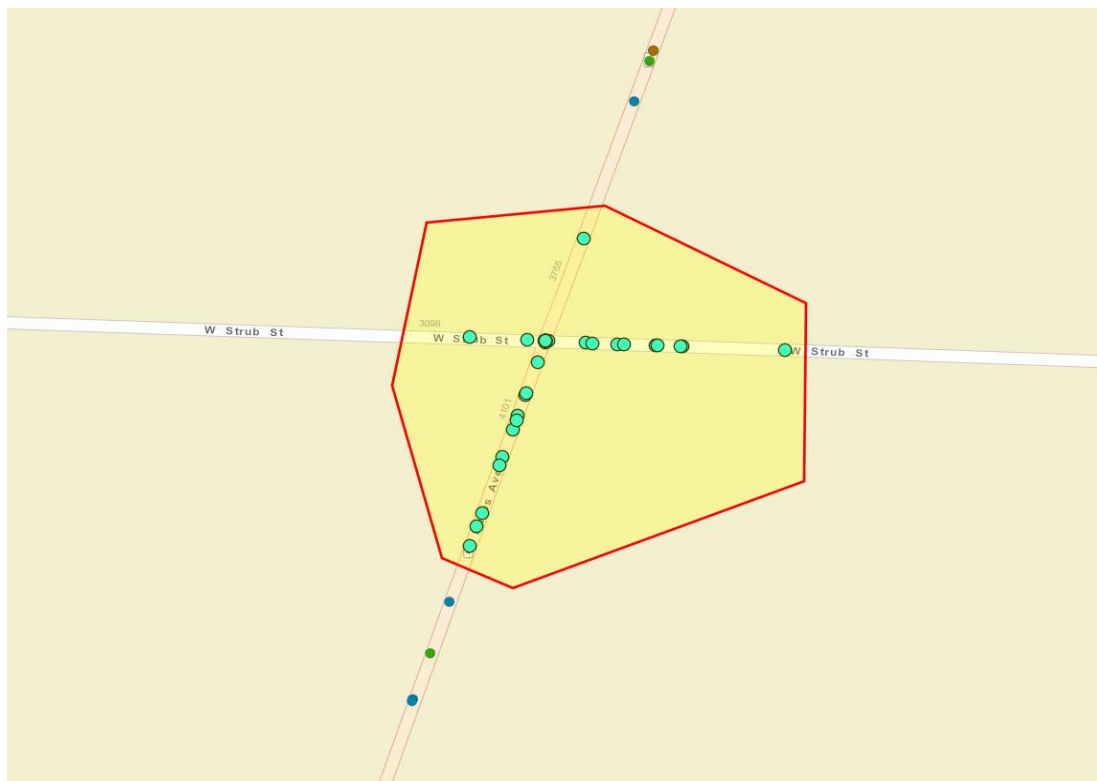
| | | | |
|-------------------------------|-----------------|----------------------------------|---|
| Intersection Location Number: | 5 | Analyst: | RSW |
| Location Name: | SR-4 / STRUB RD | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-SR-4 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 8.6 - 8.853 | ADT (8.6 - 8.853) | http://odot.ms2soft.com |
| CRS: | ERI-TR-7 | Google Map Link: | https://www.google.com/maps/@33.45, -86.5, 15z |
| SA MP: | 0.825 - 0.901 | ADT (0.825 - 0.901) | http://odot.ms2soft.com |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes appear at a higher frequency on the northbound and westbound approaches. If most highlighted crashes are indeed applicable to the intersection, the queue length may be indicative of certain timing or sight limitations



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|-----------------|
| Intersection Location Number: | 5 | SR-4 / STRUB RD |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-----------|--|-----|
| Functional Class | 3, 5 | Active Transportation Need | 1 |
| Major Route AADT | 13161 | Active Transportation Demand | 1 |
| Maximum Posted Speed Limit | 55 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.5, 0.53 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 80 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 15 | Fatal | 0 |
| 2017 | 12 | Serious | 2 |
| 2018 | 12 | Visible | 13 |
| 2019 | 16 | Possible | 13 |
| 2020 | 13 | PDO | 52 |
| 20218 | 12 | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 0 | 7 | 10 | 35 | 52 |
| Angle | 0 | 0 | 4 | 0 | 4 | 8 |
| Left Turn | 0 | 1 | 0 | 1 | 3 | 5 |
| Sideswipe - Passing | 0 | 1 | 0 | 0 | 2 | 3 |

Potential Countermeasures:

Evaluate traffic patterns and needs, analyze intersection capacity. Adjust signal timing, upgrade signals.

Signal backplates.

Consider Roundabout.

Could Right-of-Way be impacted by countermeasures?

Yes

Is an alternate intersection geometry proposed?

Yes

Was CAP-X and SPICE analysis conducted?

No

Recommended study format:

Formal

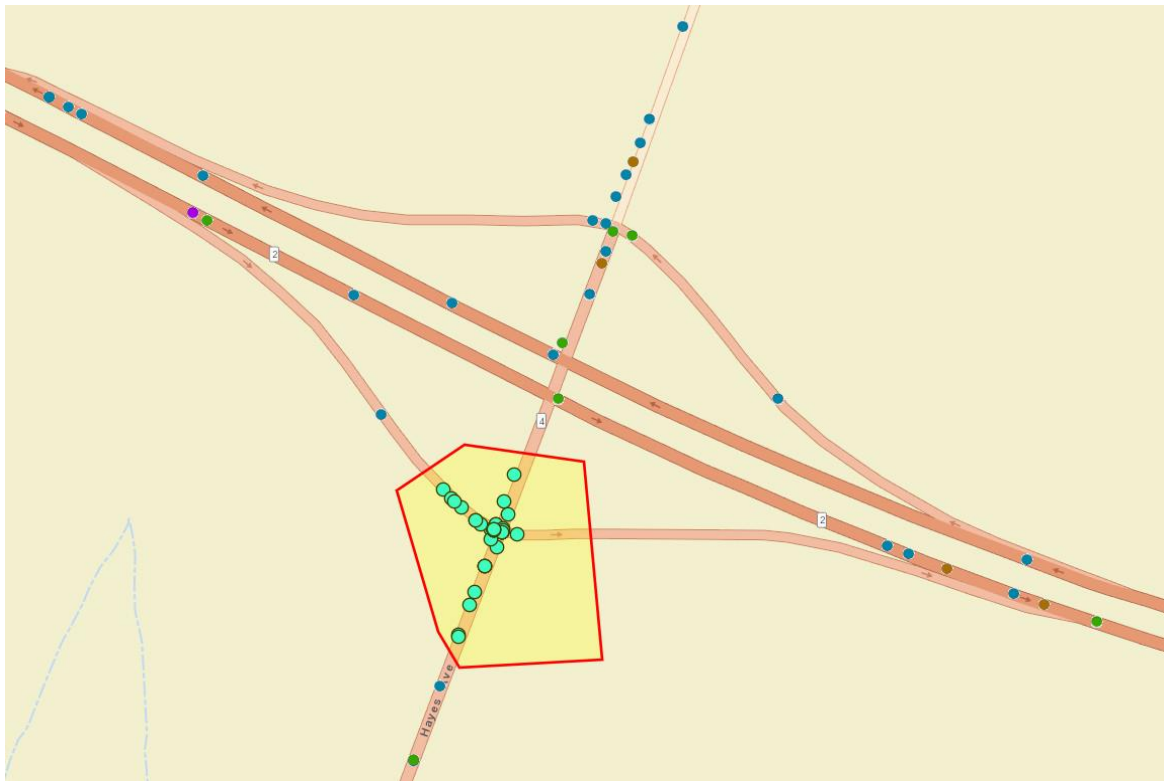
| | | | |
|-------------------------------|----------------------------------|-------------------------------------|---|
| Intersection Location Number: | 6 | Analyst: | RSW |
| Location Name: | RAMP FROM SR 2 TO SR 4 / SR-4 | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-RA-22015 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 0.327 - 0.369 | ADT (0.327 - 0.369) | http://odot.ms2soft.c |
| CRS: | ERI-SR-4 | Google Map Link: | https://www.google.c |
| SA MP: | 8.31 - 8.332 | ADT (8.31 - 8.332) | http://odot.ms2soft.c |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes concentrated on approach from SR-2 and northbound approach on SR-4.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|-------------------------------|
| Intersection Location Number: | 6 | RAMP FROM SR 2 TO SR 4 / SR-4 |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|-----|
| Functional Class | 3, 4 | Active Transportation Need | 1 |
| Major Route AADT | 12902 | Active Transportation Demand | 1 |
| Maximum Posted Speed Limit | 55 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.5 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 43 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 3 | Fatal | 0 |
| 2017 | 1 | Serious | 0 |
| 2018 | 9 | Visible | 7 |
| 2019 | 9 | Possible | 6 |
| 2020 | 9 | PDO | 30 |
| 20218 | 12 | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|--------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 0 | 2 | 4 | 16 | 22 |
| Angle | 0 | 0 | 2 | 1 | 3 | 6 |
| Fixed Object | 0 | 0 | 1 | 1 | 3 | 5 |
| Left Turn | 0 | 0 | 1 | 0 | 3 | 4 |

Potential Countermeasures:

Remove brush to improve view of intersection from ramp. Consider rumble strips on ramp. Evaluate advanced signage. Review signal timing and clear times.

Could Right-of-Way be impacted by countermeasures?

No

Is an alternate intersection geometry proposed?

No

Was CAP-X and SPICE analysis conducted?

No

Recommended study format:

Formal

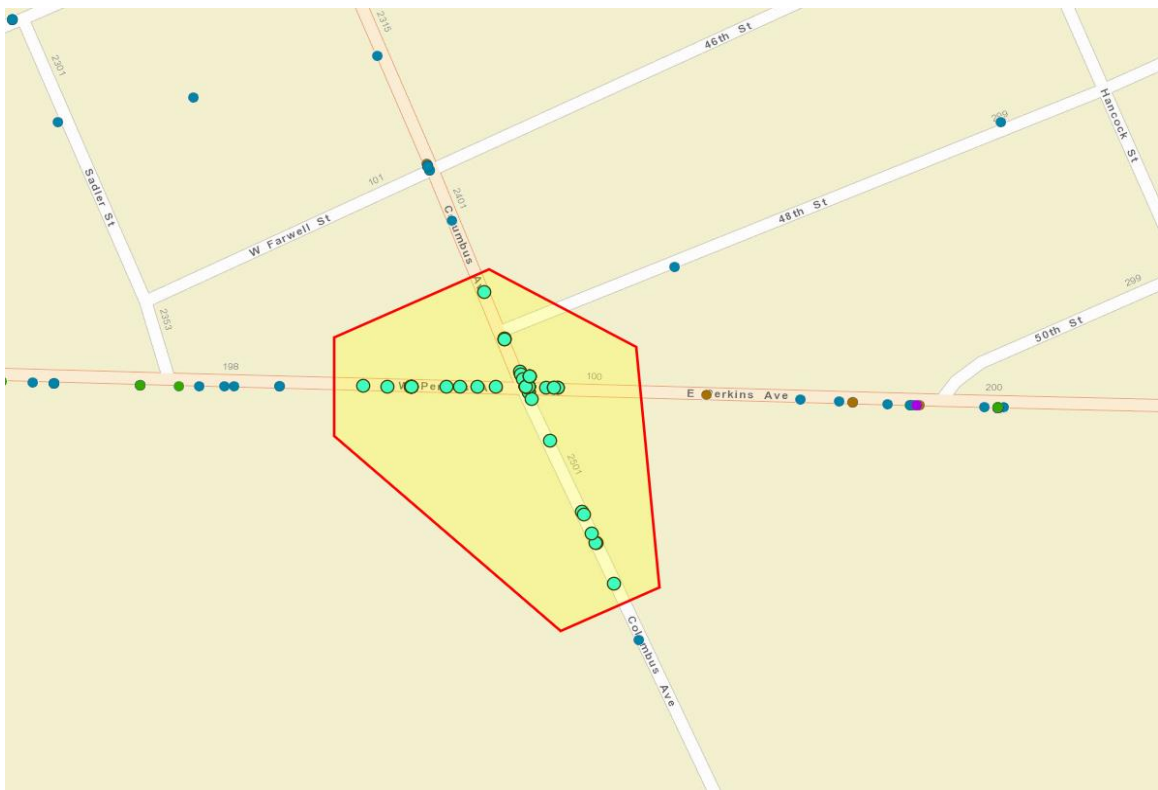
| | | | |
|-------------------------------|-------------------------------|-------------------------------------|---|
| Intersection Location Number: | 7 | Analyst: | RSW |
| Location Name: | PERKINS AVE / COLUMBUS AVE | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-CR-5 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 2.118 - 2.17 | ADT (2.118 - 2.17) | http://odot.ms2soft.com |
| CRS: | ERI-CR-120 | Google Map Link: | https://www.google.com/maps/@33.45, -86.5, 15z |
| SA MP: | 3.365 - 3.52 | ADT (3.365 - 3.52) | http://odot.ms2soft.com |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes distributed between eastbound approach and at intersection center. Highlighted crashes on the northbound approach may not be applicable, to be determined with more study.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|----------------------------|
| Intersection Location Number: | 7 | PERKINS AVE / COLUMBUS AVE |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|------|
| Functional Class | 4, 4 | Active Transportation Need | 3 |
| Major Route AADT | 23700 | Active Transportation Demand | 3, 4 |
| Maximum Posted Speed Limit | 25 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | N/A | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 79 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 17 | Fatal | 0 |
| 2017 | 16 | Serious | 4 |
| 2018 | 11 | Visible | 4 |
| 2019 | 11 | Possible | 10 |
| 2020 | 9 | PDO | 61 |
| 20218 | 15 | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 1 | 1 | 3 | 39 | 44 |
| Angle | 0 | 1 | 2 | 4 | 9 | 16 |
| Left Turn | 0 | 1 | 1 | 2 | 3 | 7 |
| Right Turn | 0 | 0 | 0 | 0 | 5 | 5 |

Potential Countermeasures:

Adjust signal timing and clear times, upgrade signals. Consider additional turn lanes based on capacity needs or to reduce overall length of existing turn lanes (to free up available signal time).
Manage/Define access points. Consider changing 48th street to right-in-right-out.
Consider Roundabout.

Could Right-of-Way be impacted by countermeasures?

Is an alternate intersection geometry proposed?

Was CAP-X and SPICE analysis conducted?

Recommended study format:

| |
|--------|
| Yes |
| Yes |
| No |
| Formal |

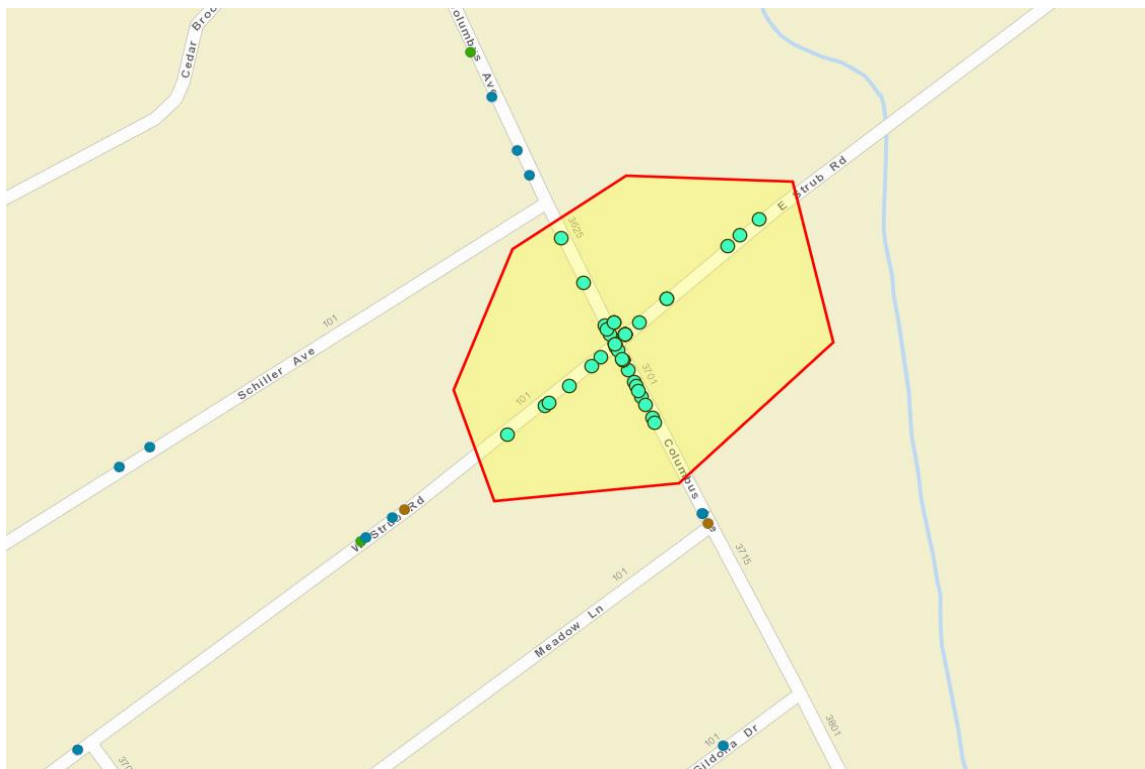
| | | | |
|-------------------------------|----------------------------|-------------------------------------|--|
| Intersection Location Number: | 8 | Analyst: | RSW |
| Location Name: | STRUB RD / COLUMBUS AVE | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-CR-7 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 3.067 - 3.747 | ADT (3.067 - 3.747) | http://odot.ms2soft.com |
| CRS: | ERI-CR-120 | Google Map Link: | https://www.google.com |
| SA MP: | 2.139 - 2.195 | ADT (2.139 - 2.195) | http://odot.ms2soft.com |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes appear concentrated on northbound approach, with some on the Strub Road approaches. Could be congestion related on Columbus Road.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|-------------------------|
| Intersection Location Number: | 8 | STRUB RD / COLUMBUS AVE |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|------|
| Functional Class | 4, 5 | Active Transportation Need | 1, 3 |
| Major Route AADT | 11411 | Active Transportation Demand | 1, 3 |
| Maximum Posted Speed Limit | 45 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | N/A | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 64 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 15 | Fatal | 0 |
| 2017 | 4 | Serious | 0 |
| 2018 | 14 | Visible | 7 |
| 2019 | 9 | Possible | 4 |
| 2020 | 12 | PDO | 53 |
| 20218 | 10 | | |

| Within Logical Termini = | | | |
|--------------------------|--|----------------|--|
| Annual Trend | | Crash Severity | |
| | | Fatal | |
| | | Serious | |
| | | Visible | |
| | | Possible | |
| | | PDO | |
| | | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 0 | 4 | 3 | 33 | 40 |
| Angle | 0 | 0 | 2 | 0 | 9 | 11 |
| Right Turn | 0 | 0 | 0 | 0 | 6 | 6 |
| Backing | 0 | 0 | 0 | 0 | 3 | 3 |

Potential Countermeasures:

Adjust signal timing, upgrade signals. Potentially reassign thru/turn lanes. Increase capacity on Columbus Avenue.

Signal backplates. Manage access points.

Consider Roundabout.

Could Right-of-Way be impacted by countermeasures?

Yes

Is an alternate intersection geometry proposed?

Yes

Was CAP-X and SPICE analysis conducted?

No

Recommended study format:

Formal

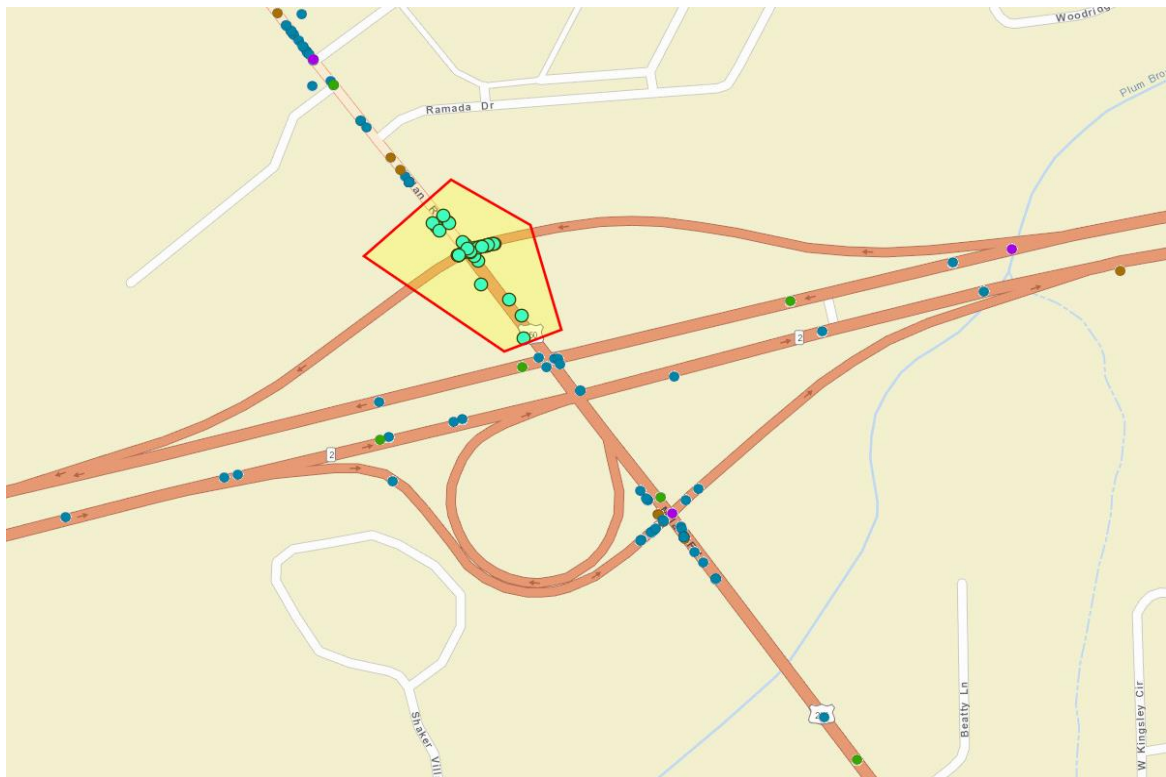
| | | | |
|-------------------------------|-------------------------------------|-------------------------------------|---|
| Intersection Location Number: | 9 | Analyst: | RSW |
| Location Name: | RAMP FROM SR 2 N TO US 250 MILAN | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-RA-22018 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 0.405 - 0.428 | ADT (0.405 - 0.428) | http://odot.ms2soft.com |
| CRS: | ERI-US-250 | Google Map Link: | https://www.google.com/maps |
| SA MP: | 3.787 - 3.938 | ADT (3.787 - 3.938) | http://odot.ms2soft.com |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

Crashes appear evenly distributed between northbound, westbound, and southbound approaches. Some highlighted crashes on the northbound approach may not be applicable, to be determined by study.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|---|--|
| Intersection Location Number: | 9 | RAMP FROM SR 2 N TO US 250 MILAN RD / US-250 |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|-----|
| Functional Class | 3 | Active Transportation Need | 3 |
| Major Route AADT | 30249 | Active Transportation Demand | 3 |
| Maximum Posted Speed Limit | 45 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.44 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 46 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 5 | Fatal | 0 |
| 2017 | 3 | Serious | 1 |
| 2018 | 15 | Visible | 2 |
| 2019 | 5 | Possible | 8 |
| 2020 | 6 | PDO | 35 |
| 20218 | 12 | | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 1 | 1 | 4 | 17 | 23 |
| Angle | 0 | 0 | 1 | 3 | 7 | 11 |
| Sideswipe - Passing | 0 | 0 | 0 | 1 | 3 | 4 |
| Fixed Object | 0 | 0 | 0 | 0 | 2 | 2 |

Potential Countermeasures:

Consider corridor study to include both interchange ramps and segment north of intersection, upgrade signals, adjust timing. Upgrade signage, include advance warnings. Consider interchange upgrades such as additional exit lane westbound.

Signal backplates.

Could Right-of-Way be impacted by countermeasures?

Is an alternate intersection geometry proposed?

Was CAP-X and SPICE analysis conducted?

Recommended study format:

| |
|--------|
| Yes |
| Yes |
| No |
| Formal |

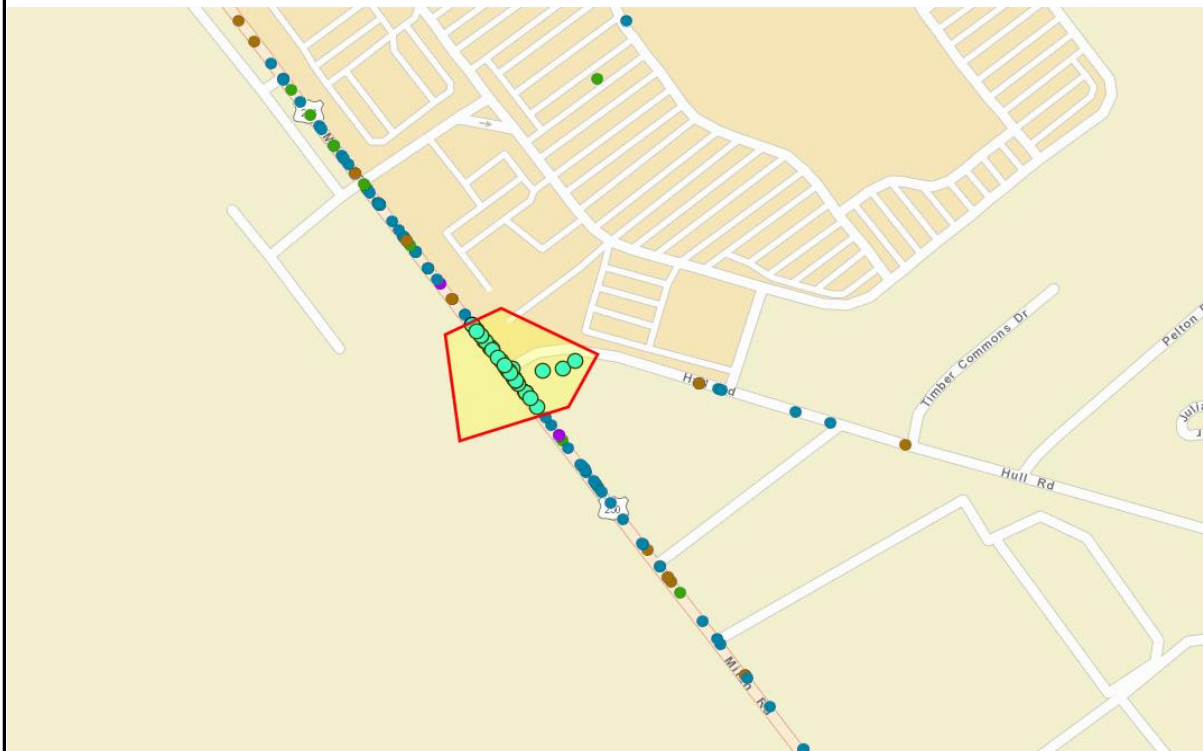
| | | | |
|-------------------------------|------------------|----------------------------------|---|
| Intersection Location Number: | 10 | Analyst: | RSW |
| Location Name: | HULL RD / US-250 | Date Reviewed: | 3/24/2021 |
| CRS: | ERI-CR-8 | Approx. Traffic Count Available? | Yes (TIMS) |
| SA MP: | 0 - 0.039 | ADT (0 - 0.039) | http://odot.ms2soft.com |
| CRS: | ERI-US-250 | Google Map Link: | https://www.google.com/maps/@33.454, -86.844, 15z |
| SA MP: | 2.637 - 2.855 | ADT (2.637 - 2.855) | http://odot.ms2soft.com |

Is the segment really an intersection?

Yes

Provide image of SA crashes and any comments on crashes/ clustering.

While there are several crashes along the US-250 corridor, this particular intersection appears to have garnered more than adjacent intersections. Some crashes on the curved portion of Hull Road.



Logical Termini Description/ Justification:

As this is an intersection, it is recommended that crashes approximately 200 feet away from the center point are reviewed to determine any association with the intersection.

| | | |
|-------------------------------|----|------------------|
| Intersection Location Number: | 10 | HULL RD / US-250 |
| Local Termini Overview Map: | | |

Safety Key Metrics

| | | | |
|--|-------|--|-----|
| Functional Class | 3,5 | Active Transportation Need | 3 |
| Major Route AADT | 30249 | Active Transportation Demand | 3 |
| Maximum Posted Speed Limit | 40 | Bicycle Level of traffic stress (Before) | N/A |
| TOAST Score (if available) | 0.44 | Bicycle Level of traffic stress (After) | N/A |

| Crash Summary | | | |
|------------------------|----|----------------|----|
| Within SA Segment = 58 | | | |
| Annual Trend | | Crash Severity | |
| 2016 | 13 | Fatal | 0 |
| 2017 | 12 | Serious | 0 |
| 2018 | 9 | Visible | 6 |
| 2019 | 11 | Possible | 5 |
| 2020 | 5 | PDO | 47 |
| 20218 | 8 | | |

| Within Logical Termini = | | | |
|--------------------------|--|----------------|--|
| Annual Trend | | Crash Severity | |
| | | Fatal | |
| | | Serious | |
| | | Visible | |
| | | Possible | |
| | | PDO | |

* 2021 data may not be complete

Top Crash Types - Logical Termini

| Crash Type | Fatal | Serious | Visible | Possible | PDO | Grand Total |
|---------------------|-------|---------|---------|----------|-----|-------------|
| Rear End | 0 | 0 | 1 | 2 | 30 | 33 |
| Angle | 0 | 0 | 0 | 0 | 8 | 8 |
| Sideswipe - Passing | 0 | 0 | 0 | 0 | 6 | 6 |
| Left Turn | 0 | 0 | 2 | 2 | 2 | 6 |

Potential Countermeasures:

Study US-250 corridor north and south of the intersection for systemic countermeasures.
Signal backplates. Assess capacity needs and potential increase of capacity on US-250. Review corridor signal timing. Reduce access points along corridor.
Consider realignment of Hull Road or move connection of Hull Road traffic to another location along US-250.

Could Right-of-Way be impacted by countermeasures?

Is an alternate intersection geometry proposed?

Was CAP-X and SPICE analysis conducted?

Recommended study format:

| |
|--------|
| Yes |
| Yes |
| No |
| Formal |